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count." "I am a determined opponent of what I think may fairly be termed the *non-sensical hypothesis of ionic dissociation* (italics ours), for there is no other appropriate term for a view which asserts that hydrogen chloride and a few other compounds are so loosely strung together that they fall to pieces when dissolved in water; out of sheer fright, it would seem, as no valid motive is suggested for such self-sacrifice; and no such charge of unprincipled levity of conduct is brought against the vast majority of compounds other than a few acids and alkalis." If there are others who oppose the theory as strongly as Prof. Armstrong, they at least have not the temerity to attack it so boldly in the face of its tacit general acceptance in the chemical world.

IN the December Journal of the American Chemical Society, George F. Payne discusses the mineral constituents of the watermelon. He finds in the ash over sixty per cent. of potash and ten per cent. of phosphoric acid; hence the need of fertilizers containing a large quantity of potash.

J. L. H.

ASTRONOMICAL NOTES.

WE have received a new book on the determination of planet and comet orbits by Dr. Karl Zelbr. It contains 125 octavo pages, and is reprinted from the first volume of Valentiner's *Handwörterbuch der Astronomie*. It will doubtless be found a very useful text-book of the subject.

THE *Astronomical Journal* of December 10th contains a series of observations of the companion of Sirius made at Washington last March by Prof. Stimson J. Brown. At the time of making these observations Prof. Brown did not consider them entitled to very much confidence, on account of the extreme difficulty experienced in seeing the companion so near the principal star. It is now evident, however, from the later observations at the Lick Observatory, that

the Washington observations are correct, and that the object seen by Prof. Brown was really the companion.

IN the *Astronomische Nachrichten* of December 14th Prof. E. C. Pickering has a note on a method of determining the relative motions of stars in the line of sight by means of spectra photographed through an objective prism. The plan consists of making a pair of photographs of the same region near the meridian in reversed positions of the telescope. As the reversal of the telescope turns the spectra 180°, we can measure on the photographs twice the linear displacement due to the relative motions of any two stars in the line of sight. The second photograph is made through the glass plate, so that the plates may be placed with their films in contact for making the comparisons.

AMONG recent series of meridian circle observations of which preliminary accounts have appeared in the astronomical periodicals, we notice the following: In the *Astronomical Journal* of December 23rd Prof. Tucker gives a summary of the results of his determinations of fundamental stars contained in the astronomical ephemerides other than the *Berlin Jahrbuch*. In the *Astronomische Nachrichten* of December 22d Prof. Küstner gives his determinations of the *Zusatzsterne* of the *Berlin Jahrbuch* list, made with the meridian circle of the Berlin observatory in the years 1886 to 1891.

H. J.

SCIENTIFIC NOTES AND NEWS.

GEN. FRANCIS A. WALKER, President of the Massachusetts Institute of Technology and Vice-President of the National Academy of Sciences, died suddenly on January 5th. He was born on July 2, 1840, and graduated from Amherst College in 1860. He had filled many important positions, having been professor of political economy in the Sheffield Scientific School of Yale University, Chief of the Bureau